RSMS-4 Design and Development — Vehicle

Outputs

- Vehicle System Requirements document (http://www.its.bldrdoc.gov/home/programs/ rsms-4/vehicle system req.html).
- Vehicle procurement specifications.

As part of the ITS program to upgrade the Radio Spectrum Measurement System (RSMS), in FY 2002 a new measurement vehicle was designed and fabrication is now underway (see Figures 1 and 2). Although the key to the design of this new vehicle/enclosure is (as always) to provide a safe, comfortable, and productive operating environment for the operators and the measurement equipment, this new design provides somewhat different capabilities than the earlier RSMS vehicle. The new design was derived by carefully reviewing the older RSMS

measurement vehicle and incorporating many suggested improvements into the new design.

The RSMS program utilizes a movable platform to perform measurements in locations ranging from those with no facilities to those with facilities including security, communications, and electrical power. The major changes from the earlier RSMS vehicle include:

- the requirement that the enclosure be able to be disconnected from the vehicle and operated in a self sufficient mode. This will allow the enclosure to be shipped or moved without the added weight of the truck.
- shielding of the enclosure with a minimum of 60 dB of shielding effectiveness over 100 MHz-26 GHz to be tested in accordance with IEEE Std 299-1997.

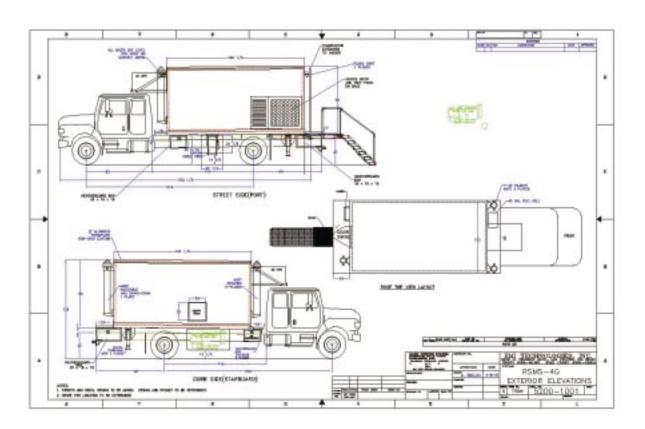


Figure 1. Side view of the RSMS-4 vehicle.

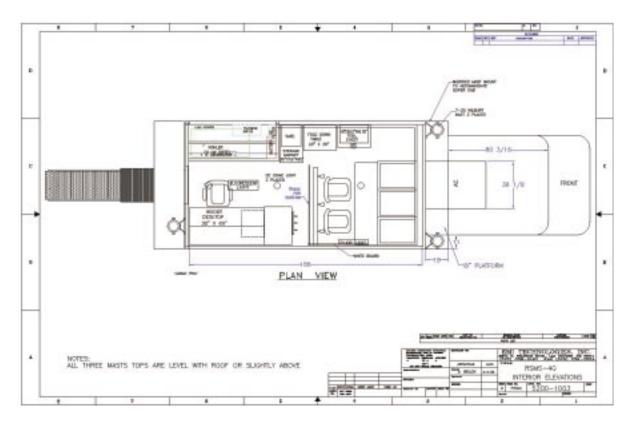


Figure 2. Side and top views of the RSMS-4 vehicle.

3) a dual power system which will operate from 110/220 VAC, as well as deep cycle rechargeable batteries. An on-board generator and fuel system will support 96 hours of continuous generator operation under 3/4 load conditions.

The new RSMS vehicle will support up to three primary operator positions, each with its own measurement system, and three 30-ft rotating pneumatic antenna towers. The technical particulars of the individual measurement systems are included in other articles in this section. The multiple measurement systems will allow efficient simultaneous measurements of multiple bands, as well as intensive multiple-perspective measurements of single-band problems. The shielding and DC power systems are intended to enable uncontaminated local noise measurements.

The vehicle will be based on a chassis with heavy-duty transmission and powerful engine, able to easily climb steep grades to hilltop sites, but also cushioning the ride with an air suspension to protect the electronic equipment payload. Adequate storage for supplies, electronic equipment and antennas, classified records, and measurements will be provided. The entire vehicle and payload must weigh less than 26,000 lb, so that it can continue to be driven by non-commercial licensed drivers.

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